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## TWO NEW VARIETIES OF *CONDALIA* FROM TEXAS

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The small pasture, or horse trap, in which the horses are grazed at the Texas Agricultural Experiment Station, Substation No. 14, contains 118 acres. The pasture is at the summit of the Edwards Plateau at an elevation of 2400 feet, and has a surface comparatively level except for the heads of two small drainage courses. A gently rounded, highly calcareous knoll in the south-central portion of the pasture covers several acres and bears an almost pure stand of *Juniperus Pinchoti* Sudw. with a slight admixture of *Quercus Vaseyana* Buckl. Below the knoll on the west occurs a variety of shrubby vegetation; farther on, in the upper part of a little valley, the shrubs give way to grassland. In this shrubby vegetation occur four kinds of *Condalia*, all growing within twenty-five feet of each other, a circumstance which I do not recall having observed elsewhere. One of these forms of *Condalia* occurs as a close colony and appears to merit varietal recognition.

*CONDALIA* OBOVATA Hook. var. *edwardsiana* var. nov. A specie differt foliis longioribus angustioribusque, spatulatis nec obovatis. This differs from the typical form of the species in its longer and narrower leaves, which are spatulate instead of obovate.

Type. Twenty-nine airline miles northwest of Rocksprings, Edwards County, Texas, altitude approximately 2400 feet, May 27, 1943, *Cory 41784* (Arnold Arboretum, Harvard University).

This variety is markedly different in appearance from other members of the genus in this area because of its greater height and lighter-colored foliage. Even after long and diligent search, I have been unable to find it anywhere save in this single, isolated thicket. It is closely related to the typical phase of the species, which inhabits the Rio Grande Plains of Texas and northern Mexico, but does not reach the Edwards Plateau or even the escarpment area.

The colony of *Condalia obovata* var. *edwardsiana* is essentially a pure consociation. The thicket is irregularly ovate, with a long diameter of 45 feet and a short diameter of 30 feet, comprising a calculated area of 900 square feet. It contains about 100 trunks, or 20 to 25 individual plants. The tallest is 3.1 meters high, and the average height is about 2.5 meters. Along the margins of this pure stand occur the following woody plants: *Quercus virginiana*, *Berberis trifoliata*, *Rhus microphylla*, *R. virens*, *Prosopis juliflora glandulosa*, *Diospyros texana*, *Opuntia leptocaulis*, *Cissus incisa*, *Columbrina texensis*, and *Condalia obtusifolia*. A plant of *Condalia viridis* Johnston is growing twenty feet south of the west end of the thicket, and there are a few others nearby on the south and west, some of them in thickets of *C. spathulata* Gray. Twenty-two feet southwest of the southwest corner of the pure stand of *C. obovata* var. *edwardsiana* is the nearest plant of *C. spathulata*, a species which is abundant southwest of this area. There are two plants of *C. obtusifolia* at the southwestern margin of the consociation. The plants of *C. viridis* and *C. obtusifolia* are clearly distinguishable from those of *C. spathulata* by their greater height. On May 27, 1943, only *C. obtusifolia* showed any stage of inflorescence, and it presented all the stages from bud to mature fruit, frequently on a single branchlet. The fruit of *C. obtusifolia*, which is much larger than that of the other condalias, changes from green to reddish and finally to an intense bluish-black upon maturing.

In 1937, Mr. Hiram Reed, a former associate of mine in the United States Department of Agriculture, retired and came to Sonora, Texas, to live. He retained his interest in plants, particularly those of some economic significance, and from time to time turned his collections over to me. Among the first lot of these collections was a *Condalia* from the hills of the Garner State Park in northern Uvalde County, Texas. At first, this specimen was referred to *C. obovata*, but subsequent detailed field study, especially on *C. obovata* and on *C. viridis* showed that it was more closely related to the latter species. In my field experience, I found that *C. obovata* is of common occurrence from sea level up to the base of the Escarpment of the Edwards Plateau, or up to elevations of approximately 600 feet, while *C. viridis* is common on the Edwards Plateau and west and south of that area at elevations of 2000 feet or more. In between these two elevations, and occupying the Escarpment area of the Edwards Plateau, is the plant under discussion. I wish to dedicate this newly recognized variety to the man who first called it to my attention, to my friend of former days as well as of the present, Mr. Hiram R. Reed.

CONDALIA VIRIDIS Jtn. var. *Reedii* var. nov. A specie differt vulgo statura duplo majore foliisque duplo majoribus (i.e., ad 13 mm. longis, 6 mm. latis).

This variety differs from the species in being (on the average)

twice as tall with at least twice its spread, and with leaves about twice as large, or up to 13 mm. long and 6 mm. broad.

Type. Northeastern or eastern brow of hills along the Frio River, Garner State Park, Uvalde County, Texas, altitude 1500 to 1600 feet, June 4, 1944, *Cory 44496* (Arnold Arboretum, Harvard University).

I know of this variety only in the Escarpment Area of the Edwards Plateau at elevations below 2000 feet. It is my opinion that two of the specimens cited by Johnston for his species, *C. viridis* (*Palmer 164*, Eagle Pass, Val Verde County, 1880, and *Harvard 61*, Eagle Pass, 1882), should instead be referred to var. *Reedii*. Eagle Pass is on the Rio Grande in Maverick County; the highest elevation in Maverick County is 956 feet.

Rather commonly, on account of its obovate leaves, var. *Reedii* has been confused with *C. obovata*, which it does resemble in its growth and general appearance. The light-green foliage of *C. obovata*, however, serves to separate it at once from var. *Reedii* and our other species of *Condalia*. On the other hand, *C. viridis* typically in the field might be easily confused with *C. obtusifolia* but never with *C. obovata*.

CONDALIA OBTUSIFOLIA (Hook.) Weberb. *R(hamnus) ? obtusifolia* Hook. ex Torr. & Gray, Fl. N. Am. 1: 685. 1840. *Zizyphus obtusifolia* (Hook. ex Torr. & Gray) A. Gray, Genera 2: 170. 1849. *Condalia obtusifolia* (Hook.) Weberb. in Engler & Prantl, Pflanzenf. 3: 404. 1850. *Zizyphus lycioides* A. Gray, Boston Jour. Nat. Hist. 6: 168. 1850. *Condalia lycioides* (A. Gray) Weberb. in Engler & Prantl, Pflanzenf. 3: 404. 1850.

For twenty years I have searched unsuccessfully for the entities described as *Condalia obtusifolia* (Hook.) Weberb. and *C. lycioides* (A. Gray) Weberb., and I have finally reached the conclusions that the two are synonymous. At my request, Dr. Ivar Tidestrom checked the material of these two alleged species at the United States National Museum and agreed with the above disposition of *C. lycioides*. In young growth or in new growth of old plants the foliage is typically that of *C. obtusifolia*, and very frequently the young growth contrasts markedly with the more abundant older growth of the same plant which has foliage typically that of *C. lycioides*. A plant with the linear, oblong, or elliptic leaves characteristic of *C. lycioides* will, upon being cut off at the surface of the ground, send up vigorous sprouts with orbicular leaves as much as 2 cm. in diameter. At and toward the eastern limit of its range in Texas the plant more commonly has foliage typical of *C. obtusifolia*, while a few hundred miles farther west, the more common type of foliage is that of *C. lycioides*. Complete intergradation of the two extremes, however, is evidence of their conspecificity. Specimens verifying this conclusion have been deposited at the Arnold Arboretum, Harvard University. The common species of

*Condalia* occurring from central Texas westward to southern California and south into northern Mexico should be known, therefore, as *Condalia obtusifolia* (Hook.) Weberb.

I am indebted to Dr. I. M. Johnston and to Mr. Ernest J. Palmer for critical study of material and for suggestions as to treatment, to Dr. Lloyd Shinnars for valuable assistance with the Latin diagnoses, and to Dr. Bassett Maguire for the above synonymy.

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## A NEW VIOLET FROM MEXICO

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*Viola galeanaensis* sp. nov. Geophytum perspicuum, foliis partibusque caulis tandrums supra solum; glabrum praeter granulis dispersis superficialibus superiorum venarum mediarum propeque ad marginibus aliquot foliorum; rhizoma erecta, 2-4 cm. longa, multis radiculis crassis; petioli foliorum radicatorum usque ad 8 cm. longi, foliorum caudicitorum breviores sed semper plures longitudines laminae folii multiplicata, laminae late ovatae, ad basim tenuiter cordatae, apiculatae, leviter crenatae, prope longiores quam latiores, usque ad 18 mm. longae; stipulae oblongae-lanceolatae, prope integrae, scariosae, usque ad 9 mm. longae; caulis 1-3, fere subterraneae, 2-5 mm. longae; flores axillares, 9-13 mm. longitudinibus; peduncula 3-5 cm. longi, bracteolae filiformes, propincae ad florem; sepala 4-5 mm., inferiori fere maiores, lanceolati, marginibus scariosis, acuti, auriculae parvae, rotunditatae; corolla pallida purpurea usque ad alba, pars media flava nervis et dorso atris, petala laterales leviter clavata-barbati, calcar brevissimum; vagina staminis apertione-collare angusto; stylus vix 2 mm. longus, abrupte inflectus prope ab ovario, abrupte amplificatus ad caput clavatum, leviter barbatus ad lateribus, stigma rostrum minimum ad superficiem ventralem capitis; capsula globosa, glabra, semina incognita.

A pronounced geophyte with only leaves and parts of the stems above the soil; glabrous except for scattered granulations along the upper surface of the midveins and near the margins of some leaves; rootstock erect, 2 to 4 cm. long, with many coarse roots; petioles of radical leaves up to 8 cm. long, those of cauline leaves shorter but always several times length of blade, leaf blades broadly ovate, shallowly cordate at base, apiculate, remotely serrate, approximately as wide as long, up to 18 mm. long; stipules oblong-lanceolate, nearly entire, scarios, up to 9 mm. long; stems 1 to 3 mostly subterranean, 2 to 5 cm. long; flowers axillary 9 to 13 mm. in length; peduncles 3 to 5 cm. long, bractlets filiform, near the flower; sepals 4 to 5 mm., the lower ones much larger,